PHOTOGRAPHS BY JIM DUXBURY

# Lighthouse pepper mill

**Jim Duxbury** makes a lighthouse pepper mill

A uniquely designed wooden pepper mill is always a favourite both to turn and to use. Pepper mills can be made in a basic form from a solid piece of wood or complex wood glue-ups of contrasting colours. In some cases, forms such as a mushroom, the Seattle Space Needle, or even some of the historic lighthouses of England and others around the world would be of interest. All of these wooden mills can be attractively turned and are only limited by your own imagination. I have made numerous pepper mills of various shapes and sizes; however, the most popular is the lighthouse design. Let's get started.


## JIM DUXBURY

Jim is a woodturner and inventor who thinks and creates 'out of the box.' He makes a variety of items, including kaleidoscopes, wooden hats, pens, and even a working Foucault pendulum. More of his fine wooden objects and plans can be found on his website.

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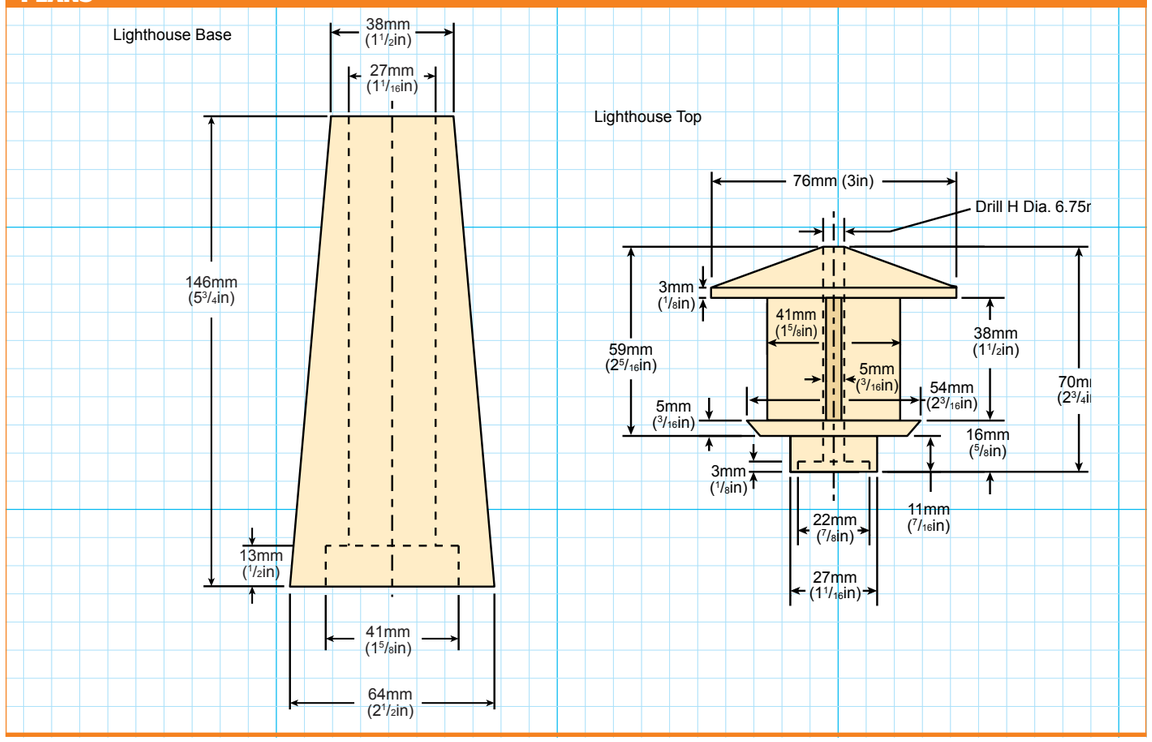
**EQUIPMENT USED**
25mm spindle roughing or spindle gouge
10mm detail gouge
12mm parting tool
2mm parting tool
6mm point scraper
41mm Forstner drill bit
27mm Forstner drill bit
6.75mm or H drill bit
Callipers: both dial & OD
Wire burner
Abrasives from 100-320 grit
Spray lacquer
PPE: facemask, respirator/dust mask and extraction
203mm stainless steel pepper mill kit – with detailed assembly instructions

**TIMBER REQUIREMENTS**
**Maple *(Acer saccharum)*:** 76 × 76 × 203mm and 25 × 25 × 178mm – any white wood can be used
**Wenge *(Millettia laurentii)*:** 51 × 5 × 102mm – any dark wood can be used
**Cherry *(Prunus spp.)*:** 76 × 19 × 152mm – any brown wood can be used

## PLANS

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1 The first step is to gather all the materials to make your 203mm pepper mill

2 Start by placing the 76 × 76 × 203mm piece of maple *(Acer saccharum)* between centres on the lathe. You can then turn it to a diameter of 64mm, then mark a cut line 146mm from the drive end. Cut a tenon on the end of the cylinder to fit your chuck

3 Next, turn the piece round, mount it in a chuck and bring up the tailstock. Square off the end with a finish cut

***"...when drilling with a chuck mounted in the tailstock, keep one hand on the drill chuck with pressure towards the tailstock"***

4 This will be the finished bottom of the pepper mill. Slow the lathe down to about 450rpm and using a 41mm Forstner bit, drill a 13mm deep recess. Always remember, when drilling with a chuck mounted in the tailstock, keep one hand on the drill chuck with pressure towards the tailstock; this will ensure that the chuck does not work itself out of the taper

5 When that is completed, the next step is to mount a 27mm Forstner bit and drill through the cylinder. A drill bit extension may be required or the piece can be turned around and drilled from the other end if the Forstner bit is not long enough

6 When the drilling has been completed, remove the drill and chuck, put a cone end in the tailstock, slide the cone into the drilled hole and lock the tailstock in place

7 With a parting tool, cut a notch about 13mm wide down to a 38mm cylinder. This references both ends of the base and allows the taper to be easily cut

8 This lighthouse has a straight taper – no beads, coves, dimples or protrusions. The trim lines are burned in with steel wire mounted in wooden handles. To get the burn lines in the exact location, measure 13mm in from each end and place a pencil line. To make five lines, measure halfway between these two lines and mark a pencil line, then measure halfway between those lines and place more pencil lines. With a point scraper, make a small cut on each line...

9 ... you can then increase the lathe speed and burn the lines in

10 Once you've finished burning the lines in, you can sand the piece to a final finish

11 Next, turn the lathe speed down, move the tailstock out and part off. This completes the lighthouse base and we can now start on the top

*"Be sure all grain is running in the same direction"*

12 Because longer strips are safer to cut on the tablesaw and easier to glue and clamp, I show making three of this part at one time. This being said, the following dimensions are for a single top and will start with the light section. Take the piece of maple measuring 25 × 25 × 178mm and cut the 178mm length into four equal lengths. Then, take the wenge *(Millettia laurentii)* and cut the 102mm length in half, making two 51 × 51 × 5mm pieces. Take one of these pieces and cut it in half, with the grain, leaving two 51 × 25 × 5mm pieces. Next, take each one of these wenge pieces and glue a white piece onto each side of each piece. This makes two maple/wenge/maple pieces, which gives us the effect we're looking for. When the glue has cured, sand one side of each piece flat and glue these two pieces onto the remaining wenge piece. Be sure all grain is running in the same direction


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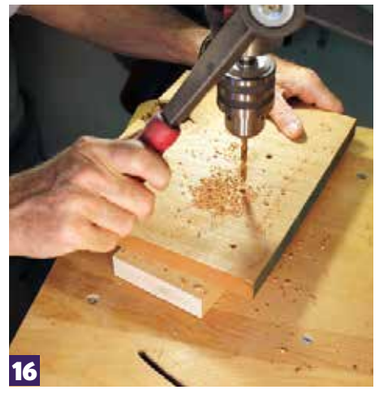
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13 Once the glue has totally cured, mount this piece between centres. Locate the axis points centred on the wenge wood cross, turn the piece to a 41mm diameter and part off both ends to make a final length of 38mm. Mount this cylinder in a chuck, locate the centre with a starter bit...

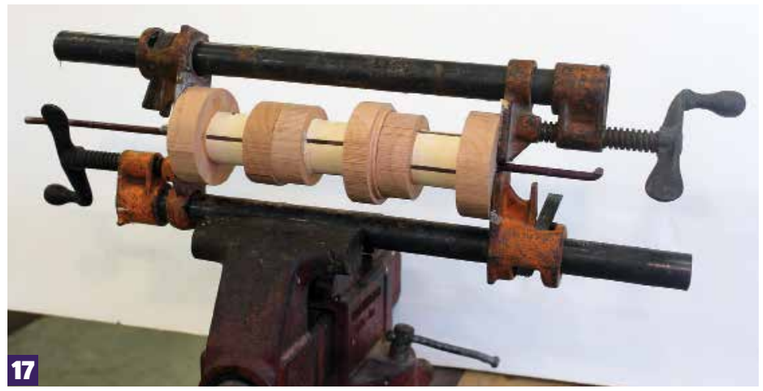
14 ... and you are then ready to drill through with a 6.75mm (H) drill

15 The roof and skirt of the light are made from the piece of cherry measuring 76 × 19 × 152mm. You then need to draw a 76mm circle and a 54mm circle...

16 ... and drill a 6.75mm (H) hole in the centre of each

*"The roof and skirt of the light are made from the piece of cherry measuring 76 × 19 × 152mm"*

17 Cut these circular pieces out on the bandsaw and with the aid of a metal rod or even the drill bit, glue and clamp one piece to each end of the previously turned light cylinder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18 When the glue has cured on this piece, mount it between point centres and turn a tenon, which measures about 6 × 54mm on the 76mm end

19 You then need to chuck up on this tenon and secure with the point tailstock centre. Next, trim all surfaces round and begin turning the roof and skirt shape


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## HANDY HINTS

1. Purchase the pepper mill hardware kit and ensure to read all instructions thoroughly before you begin
2. When drilling on the lathe, always keep one hand on the drill chuck with pressure toward the tailstock to prevent the chuck from vibrating loose
3. Always wear a face shield, especially when marking lines with callipers
4. Using sharp tools for all of your turning projects is a must
5. When sanding and burning, always wear a respirator. In fact, whenever you are in the workshop, full PPE should always be worn wherever possible
6. Use a started bit when drilling smaller diameter holes; this will ensure that the drill does not deflect
7. For maximum strength be sure all glued surfaces of the pepper mill are sanded smooth and flat

20 The next step is to set the callipers to 27mm and cut the 11mm tenon. You can then test fit this tenon in the base of the lighthouse. It must turn easily but not be too loose. Adjust as needed and sand all surfaces below the roof top

21 You can now remove the tailstock. From the pepper mill kit hardware, take the turn plate – a round disc with a square hole in it. Set the callipers to the exterior diameter of this disc. Wearing your face shield, set the lathe at a slow speed and mark a cut line in the end of the tenon. Exercising caution, resting the callipers on the toolrest, touch only the calliper tip closest to you and move this tip until the scratch line aligns with the other tip held just off the rotating wood. When the calliper tips are both over the scratch line, press the scratching tip in further to cut a solid line

*"Touch only the calliper tip closest to you"*

22 Then, using a small parting tool, cut a recess deep enough to receive the turn plate...

23 ... drill pilot holes and you are then ready to screw it in place

24 Next, reverse the piece and mount it in a chuck. Bring up the point tailstock and rough shape the roof

25 Once that is done, you can remove the tailstock and using a detail gouge with light cuts, finish the roof

26 Trim rings or roof designs can be added as you see fit. Final sand all the exterior surfaces and the mill is ready for you to apply your chosen finish. I use spray lacquer for most of my mills, but polyurethane or any of the hard surface finishes are suitable. A pepper mill can get a lot of use so apply three or four coats. When the finish has dried, mount the remaining kit hardware, refer to kit assembly instructions, add a few pepper corns and give it a try ●


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## HANDY HINTS

**8.** To achieve the exact location of a wire burn line, cut a shallow starter groove with a point scraper

**9.** Make the tenon between the base and light fairly loose so that it turns easily and will not bind should the weather change

**10.** It is helpful to mount hardware in place while mounted on the lathe

**11.** Pieces that are handled frequently should have a hard finish such as lacquer. Oil finishes build up a patina and are not easily cleaned